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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/875,151	06/07/2001	Toshifumi Sato	Q64872	7262

7590

09/06/2005

SUGHRUE, MION, ZINN, MACPEAK & SEAS
2100 Pennsylvania Avenue, N.W.
Washington, DC 20037

EXAMINER

BURD, KEVIN MICHAEL

ART UNIT	PAPER NUMBER
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2631

DATE MAILED: 09/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/875,151

Applicant(s)

SATO, TOSHIFUMI

Examiner

Kevin M. Burd

Art Unit

2631

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 July 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

1. This office action, in response to the amendment filed 7/13/2005, is a final office action.

Response to Amendment

2. The previous objection to the abstract is withdrawn in view of the amendment.

Response to Arguments

3. Applicant's arguments filed 7/13/2005 have been fully considered but they are not persuasive. Applicant states there is no teaching or suggestion that Kanda's apparatus is used or could be used for processing electromagnetic signals. The examiner disagrees. Kanda discloses a receiver circuit 12 in figure 1 for receiving ultrasonic signals. The received signal is converted to a digital signal and processed. Hoffman discloses transmitting ultrasonic signals after spreading using CDMA and despreading the received signal before converting the analog signal to a digital signal for processing. The combination of Kanda in view of Hofmann discloses an apparatus for processing electromagnetic signals. On page 8 of Applicant's remarks filed 7/13/2005, Applicant acknowledges Hoffman addresses electromagnetic signals.

Applicant states Kanda does not disclose or suggest claim 1's differential detector, averager or peak detector. The examiner disagrees. The coefficient calculator is disclosed in column 7, lines 24-30, the differential detector is disclosed in column 7,

lines 31-34, the peak detector is disclosed in column 7, lines 35-37 and the averager circuit is shown in figure 7, element 47.

For these reasons and the reasons stated in the previous office action, the rejections of the claims are maintained.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanda et al (US 5,060,515) in view of Hofmann (WO 00/01099). Hofmann (US 2001/0005176 A1) is used as a translation of WO 00/01099.

Regarding claim 1, Kanda discloses a communication system comprising a frame correlation circuit that calculates a frame correlation coefficient (column 1, lines 40-46). A difference is detected according to the correlation and the difference data is input to an averaging means (column 7, lines 49-64 and figure 7). After calculating the average, an output means outputs a coefficient corresponding to the maximum average value (peak) (column 7, lines 65-68). Additional information is found in column 5, lines 26-63. Kanda discloses the system uses an ultrasonic transmitter/receiver circuit (abstract). Kanda does not disclose the circuit uses CDMA signals to communicate. Hofmann discloses an ultrasonic transmission system where digital information is spread to great

bandwidth with a CDMA technique (abstract). The CDMA ultrasonic system is capable of transmitting at higher data rates by eliminating echoes and other sources of interference (paragraph 0009). For this reason, it would have been obvious for one of ordinary skill in the art at the time of the invention to utilize the transmission system of Kanda using CDMA signals as stated by Hofmann.

Regarding claim 3, the averaging circuit uses the same time value for each averaging step (column 5, lines 48-63).

Regarding claim 4, the values are compared to one another to determine which value is the maximum value.

5. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kanda et al (US 5,060,515) in view of Hofmann (WO 00/01099) as applied to claim 1 above, and further in view of Okawa et al (US 2003/0031195).

Regarding claim 2, the combination of Kanda and Hofmann disclose the communication system disclosed in paragraph 4. The combination does not disclose a pilot code is inserted into the transmitted signal for executing coherent detection. Okawa discloses a CDMA transmission method capable of improving the accuracy of channel estimation using pilot symbols and the pilot symbols, which are used for channel estimation for coherent detection, are inserted into coded information data on code channels at fixed intervals, and then the data is modulated by the modulator (abstract). This allows data to be recovered with fewer errors at the receiver. It would have been obvious for one of ordinary skill in the art at the time of the invention to utilize the

teachings of Okawa in the combination of Kanda and Hofmann for the reasons stated above.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M. Burd whose telephone number is (571) 272-3008. The examiner can normally be reached on Monday - Friday 9 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kevin M. Burd
8/31/2005


KEVIN BURD
PRIMARY EXAMINER